

**COMMONWEALTH OF VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL QUALITY**

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**Subject:** Water Guidance Memo No. \_\_\_\_ - \_\_\_\_ (DRAFT 9/4/2008)  
Coordination of Health Complaints Related to Biosolids and Implementation of VDH  
Recommended Buffers at Biosolids Land Application Sites

**To:** Regional Directors

**From:** Ellen Gilinsky, Ph.D., Director, Water Division

**Date:** \_\_\_\_/\_\_\_\_/\_\_\_\_

**Copies:** Deputy Regional Directors, Regional Water Permit Managers, Regional Water  
Compliance Managers, James Golden, Rick Weeks, Neil Zahradka, and Fred  
Cunningham, DCR, VDH

**Summary:** This guidance addresses coordination with the Virginia Department of Health  
(VDH) concerning health related complaints received regarding biosolids applications, as well as  
implementation of VDH recommended buffers at biosolids application sites.

**Electronic Copy:**

An electronic copy of this guidance in PDF format is available for staff internally on DEQNET,  
and for the general public on DEQ's website at: <http://www.deq.virginia.gov/waterguidance/>.

**Contact Information:**

Please contact Christina Wood, Office of Land Application Programs at (804) 698-4263 or  
cmwood@deq.virginia.gov with any questions you have regarding the application of this  
guidance.

**Disclaimer:**

**This document is provided as guidance and, as such, sets forth standard operating  
procedures for the agency. However, it does not mandate any particular method nor does it  
prohibit any alternative method. If alternative proposals are made, such proposals should  
be reviewed and accepted or denied based on their technical adequacy and compliance with  
appropriate laws and regulations.**

## **Authority**

The DEQ is authorized to issue permits for the land application of biosolids in accordance with the Virginia Pollution Abatement (VPA) Permit Regulation, 9VAC25-32-310 through 760 and the Virginia Pollutant Discharge Elimination System (VPDES) Permit Regulation, 9VAC25-31-420 through 720.

DEQ is authorized to extend buffers for occupied dwellings and property lines for all land application sites.

## **VPA Permits**

*As provided for under 9VAC25-32-100.6: Where, because of site-specific conditions, including soil type, identified during the permit application review process, the Department determines that special requirements are necessary to protect the environment or the health, safety or welfare of persons residing in the vicinity of a proposed land application site, the Department may incorporate in the permit at the time it is issued reasonable special conditions regarding buffering, transportation routes, slope, material source, methods of handling and application, and time of day restrictions exceeding those required by this regulation. The permit applicant shall have at least 14 days in which to review and respond to the proposed conditions. Also, 9VAC25-32-490 states However, the Board may impose standards and requirements which are more stringent than those contained in this regulation when required to protect public health or prevent nuisance conditions from developing either within critical areas, or when special conditions develop prior to or during biosolids use operations. In addition, 9VAC25-32-560.B.3.d.(2) allows extending the buffer setback to 400 feet or more from occupied dwellings: For applications where surface applied biosolids are not incorporated, the Department (or the local monitor with approval of the department) may require as a site-specific permit condition, extended buffer zone setback distances when necessary to protect odor sensitive receptors. When necessary, buffer zone setback distances from odor sensitive receptors may be extended to 400 feet or more and no biosolids shall be applied within such extended buffer zones. In accordance with 9 VAC 25-32-100 and 9 VAC 25-32-490, the Board may impose standards and requirements that are more stringent when required to protect public health and the environment, or prevent nuisance conditions from developing, either prior to or during biosolids use operations.*

## **VPDES Permits**

*As provided for under 9VAC25-31-460 A.: On a case-by-case basis, the board may impose requirements for the use or disposal of sewage sludge in addition to or more stringent than the requirements in this part when necessary to protect public health and the environment from any adverse effect of a pollutant in the sewage sludge. Also, 9VAC25-31-460 C. states: For sewage sludge land application where, because of site-specific conditions, including soil type, identified during the permit application review process, the department determines that special requirements are necessary to protect the environment or the health, safety or welfare of persons residing in the vicinity of a proposed land application site, the department may incorporate in the permit at the time it is issued reasonable special conditions regarding buffering, transportation routes, slope, material source, methods of handling and application, and time of day restrictions exceeding those required by this regulation. The permit applicant shall have at*

*least 14 days in which to review and respond to the proposed conditions.*

*In addition, 9VAC25-31-505 D. states: For applications where surface applied sewage sludge are not incorporated, the department (or the local monitor with approval of the department) may require as a site-specific permit condition, extended buffer zone setback distances when necessary to protect odor sensitive receptors. When necessary, buffer zone setback distances from odor sensitive receptors may be extended to 400 feet or more and no sewage sludge shall be applied within such extended buffer zones. The board, in accordance with 9VAC25-31-460, may impose standards and requirements that are more stringent when required to protect public health and the environment, or prevent nuisance conditions from developing, either prior to or during sewage sludge use operations.*

These regulatory citations reflect the agency authority to extend buffers both during the permit issuance process (9VAC25-32-100.6, 9VAC25-31-460.C., and 9VAC25-31-505 D.), as well as at times following permit issuance (9VAC25-32-490, 9VAC25-32-560.B.3.d.(2), 9VAC25-31-460 A and 9VAC25-31-505 D.).

## **Background**

On January 1, 2008, regulatory oversight for land application of biosolids (treated sewage sludge) was transferred from the Virginia Department of Health to the Virginia Department of Environmental Quality. This transfer occurred at the direction of the 2007 General Assembly, which passed legislation requiring that all land application of biosolids in the Commonwealth of Virginia be permitted under either a Virginia Pollution Abatement permit or Virginia Pollutant Discharge Elimination System permit. A Biosolids Expert Panel was also created by resolution to study the impact of land application of biosolids on human health and the environment.

These legislative activities highlight the fact that additional information is needed regarding the practice of land application of biosolids. As noted in the 2002 National Research Council's report on Biosolids Applied to Land: "There is no documented scientific evidence that the Part 503 rule has failed to protect public health. However, additional scientific work is needed to reduce persistent uncertainty about the potential for adverse human health effects from exposure to biosolids."<sup>1</sup> In November 2007, the VDH released a report entitled "Health Effects of Biosolids Applied to Land: Available Scientific Evidence" which concluded in part: "Although much still needs to be learned about the content, bioavailability and fate of chemicals and pathogens in biosolids and their health effects, there does not seem to be strong evidence of serious health risks when biosolids are managed and monitored appropriately."<sup>2</sup>

In the course of administering the biosolids program, DEQ has received a number of complaints regarding health related concerns. This guidance is intended to establish procedures for consistently dealing with health related complaints. As the VDH holds primary responsibility for health related issues in the Commonwealth, DEQ has requested and received specific recommendations from VDH regarding health related investigations and appropriate buffer requirements.<sup>3</sup>

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1. 2002 National Research Council Report Summary, <http://books.nap.edu/html/biosolids/reportbrief.pdf>
  2. November 2007 Virginia Department of Health Report, <http://www.deq.virginia.gov/export/sites/default/info/documents/biosolids/Biosolidsfinalupdate.pdf>
  3. Virginia Department of Health letter from James Burns, dated May 2, 2008, (Attachment A)

### **Assignment of Buffers to Land Application Sites**

Historically, VDH has recommended extended buffers in cases where vulnerable persons were identified in close proximity to application sites; however, this policy proved difficult to implement effectively and efficiently. The VDH has since recommended to DEQ that those increased buffers be extended to all sites. These additional buffers are intended to provide an abundance of caution in response to citizen's concerns and to make administration of the program more practical.

Therefore, while VDH continues to believe that the existing regulatory buffers of 100 feet from property lines and 200 feet from occupied dwellings provide adequate protection to the majority of the public, they have recommended that DEQ extend the buffers to 200 feet from publicly accessible property lines and 400 feet from occupied dwellings in all situations to minimize the need for individual consideration of health complaints related to the spreading of biosolids. They have also developed a new process by which VDH will handle requests for individual consideration above and beyond these extended buffers.

### **Implementation of Extended Buffer Requirements**

1. Effective with issuance of this guidance, increased buffers of 200 feet from publicly accessible property lines and 400 feet from occupied dwellings should be maintained at all application sites. A property line will be considered to be publicly accessible if the parcel it abuts contains an occupied residence, or the property is open to the general public and routinely accommodates pedestrians (e.g. parks, nature trails, businesses, etc). A public road adjacent to a field would not be considered a publicly accessible property line as its primary purpose is to convey vehicular traffic, not pedestrians.

Buffers will be incorporated into VPA and VPDES permits as they are issued, reissued or modified. For BUR permits, these buffers will be required as the permits are converted to VPA permits or in special cases associated with enforcement actions.

2. Property owners and residents in the vicinity of land application sites who assert that for health reasons, they need additional protection beyond the increased buffers specified in item 1 above must contact the local Health District Director to request an individual assessment to determine if an extended buffer is warranted.
  - a. The DEQ shall provide the property owner/resident with the name and phone number of the local Health District Director for their county. This can be found at <http://www.vdh.virginia.gov/lhd/>
  - b. VDH will handle the complaint according to their internal procedures. If the property owner/resident's medical condition is not on the VDH list, the local Health District Director has been asked to request that the Biosolids Medical Review Committee (VDH committee of medical professionals) be convened to make a buffer determination.
  - c. The local Health District Director will inform DEQ of the outcome of the complaint and any recommendations they have for further changes to the buffer

requirements.

3. In the event that a citizen requests an individual assessment from the local Health District Director, the land application of biosolids may continue while the health investigation is conducted, unless the Health Commissioner, pursuant to §[32.1-13](#) of the Code of Virginia, issues an emergency order to cease operation of the biosolids use activity. If DEQ determines that an activity associated with the land application is not in compliance with regulatory requirements, the activity shall be ceased.

### **Notification Signs at Land Application Sites**

The land applicators should post notification signs 30 days prior to scheduled land application. This will aid in ensuring that the public is aware of the scheduled activity and that public concerns be voiced prior to start of the land application, and allow time for any VDH consultation prior to the scheduled application. Placement and visual appearance of the signs are critical in order to provide the intended notification to the public. Therefore, the following criteria should be considered when posting notification signs:

1. The signs must be placed so that they are clearly visible from the public right-of-way. In addition, they should be recognizable from a vehicle passing by in both directions on that public right-of-way. Preferably, a double-sided sign or 2 signs positioned perpendicular to the road should be used. One sign is required, but multiple signs are encouraged.
2. Each sign must be at least 4 square feet in size, but a larger size is recommended to provide better recognition, unless disallowed by local ordinance. The print should be as large as possible to maximize legibility.
3. The use of high contrast colors such as black and white or dark green and white on a glare free surface are encouraged to improve legibility.

### **Waivers - All VDH–BUR, VPA and VPDES Permits – Existing and New**

The buffer setback to property lines and occupied dwellings may be reduced or eliminated with written consent from the affected landowner as well as the resident if they do not own the dwelling. If more than one buffer setback is involved, the more restrictive buffer stands. For instance, if the house and drinking water well are located together on the field to be land applied, and the owner agrees to apply up to 50 feet from the house, the required 100 foot buffer from the well must be maintained. To avoid conflicting usage of the land in the waived buffer area, access restrictions and type of crop must also be considered prior to reducing the buffers.

## Attachment A

Virginia Department of Health letter from James Burns, dated May 2, 2008